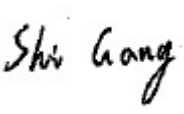
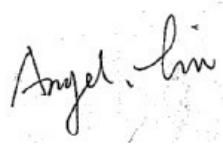
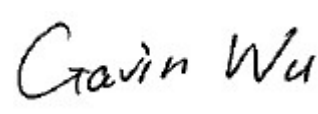


TEST REPORT

Report No.:	EM201100418-9	Application No.:	ZJ00010987
Client:	Mobile Devices Ingenierie		
Address:	100 avenue de Stalingrad VILLEJUIF-France		
Sample Description:	MUNIC		
Model:	D4M 35MD02		
Test Location:	EMC Laboratory of Guangzhou GRG Metrology and Test Technology Co., Ltd		
Test Specification:	FCC Part 15 Subpart C(Section 15.239):2010		
Issue Date:	2011-12-09		
Test Result:	Pass.		
Tested By:	Reviewed By:	Approved By:	
Shi Gang/ Test Engineer	Angel Liu / Technical Support	Gavin Wu / Manager	
			
Date:2011-12-09	Date:2011-12-09	Date:2011-12-09	
Other Aspects:			
Abbreviations: ok / P = passed; fail / F = failed; n.a. / N = not applicable			
The test result in this test report refers exclusively to the presented test sample. This report shall not be reproduced except in full, without the written approval of GRGT.			

GRG Metrology and Test Technology Co., Ltd.

Address: 163, Pingyun Road, West of Huangpu Avenue, Guangzhou, Guangdong, P.R. China

Tel: +86-20-38699960

Fax: +86-20-38695185

Email: cert-center@grg.net.cn

<http://www.grgtest.com>

Ver.: 1.0 / 01.Jan.2011

DIRECTIONS OF TEST

1. This station carries out test task according to the national regulation of verifications which can be traced to National Primary Standards and BIPM.
2. The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.
3. If there is any objection concerning the test, the client should inform the laboratory within 15 days from the date of receiving the test report.

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1. TEST RESULT SUMMARY

FCC Part 15 Subpart C(15.239):2010			
Standard	Item	Rule Section	Result
FCC Part 15,Subpart C (15.239)	Antenna Requirement	FCC Part 15.203	PASS
	Conduction Emissions	FCC Part 15.207	N/A(Note)
	Band Edges	FCC Part 15.239(d)	PASS
	Field strength	FCC Part 15.239(b)	PASS
	Radiated Emission	FCC Part 15.239(c) FCC Part 15.209	PASS
	Emission bandwidth	FCC Part 15.247(a)	PASS

2. GENERAL DESCRIPTION OF EUT

2.1 Applicant

Name: Mobile Devices Ingenierie
Address: 100 avenue de Stalingrad VILLEJUIF-France

2.2 Manufacturer

Name: Shenzhen Longhorn Technology Co., Ltd.
Address: Longhorn Hi-tech estate Gongyeyuan Rd. Dalang Street, Bao'an Shenzhen 518109

2.3 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment: MUNIC
Model No.: D4M 35MD02
Adding Model: /
Trade Name: 
Power Supply: DC 5V,2000mA MAX,7.5W
Frequency Range: Bluetooth: 2402MHz~2480MHz
GPRS: TX:824.2MHz ~ 848.8MHz;RX: 869.2MHz ~ 893.8MHz
TX:1850.2MHz ~ 1909.8MHz;RX: 1930.2MHz ~ 1989.8MHz
FM Transmitter: 88.1-107.9MHz
GPS: 1575.42MHz
Type of emission: FHSS;GPRS;FM
Note: The Bluetooth part test refer to report: EM201100418-8
The GPRS part test refer to report: EM201100418-10

2.4 LOCAL SUPPORTIVE INSTRUMENTS

Cable Description	Length (M)	From/Port	To
DC Cable 1	1.5	DC Power supply	EUT
DC Cable 2	1.4	Power source	DC Power supply
Serial Cable	1.2	PC	EUT

Name of Equipment	Manufacturer	Model	Serial Number
PC	Lenovo	E46L	EB22867264

3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests and measurements refer to this report were performed by EMC Laboratory of Guangzhou GRG Metrology and Test Technology CO., LTD.

Add. : 163 Pingyun Rd, West of Huangpu Ave, Guangzhou, 510656, P. R. China

Telephone: +86-20-38699959, 38699960, 38699961

Fax : +86-20-38695185

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC Listed Lab (No. 688188)
China	CNAS (No.L0446)
China	DILAC (No.DL175)
Canada	Registration No.:8355A-1

3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	30MHz~1000MHz	4.2dB
		1GHz~12.75GHz	4.2dB
	Vertical	30MHz~1000MHz	4.4dB
		1GHz~12.75GHz	4.4dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.4 LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Band Edges				
Receiver	R&S	ESU40	100106	2012-09-26
Biconical Log-periodic Antenna	ETS.LINDGREN	3142C	00075971	2012-07-31
Field strength				
Receiver	R&S	ESU40	100106	2012-09-26
Biconical Log-periodic Antenna	ETS.LINDGREN	3142C	00075971	2012-07-31
Radiated Emission				
Receiver	R&S	ESU40	100106	2012-09-26
Biconical Log-periodic Antenna	ETS.LINDGREN	3142C	00075971	2012-07-31
Emission bandwidth				
Receiver	R&S	ESU40	100106	2012-09-26
Biconical Log-periodic Antenna	ETS.LINDGREN	3142C	00075971	2012-07-31

NOTE: The calibration interval of the above test instruments is 12 months.

4. Antenna Requirement

The EUT antenna is PCB Printed antenna. Antenna gain is 0dBi .which accordance 15.203.is considered sufficient to comply with the provisions of this section



Antenna

5. Band Edges

5.1 LIMITS

Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

5.2 TEST PROCEDURES

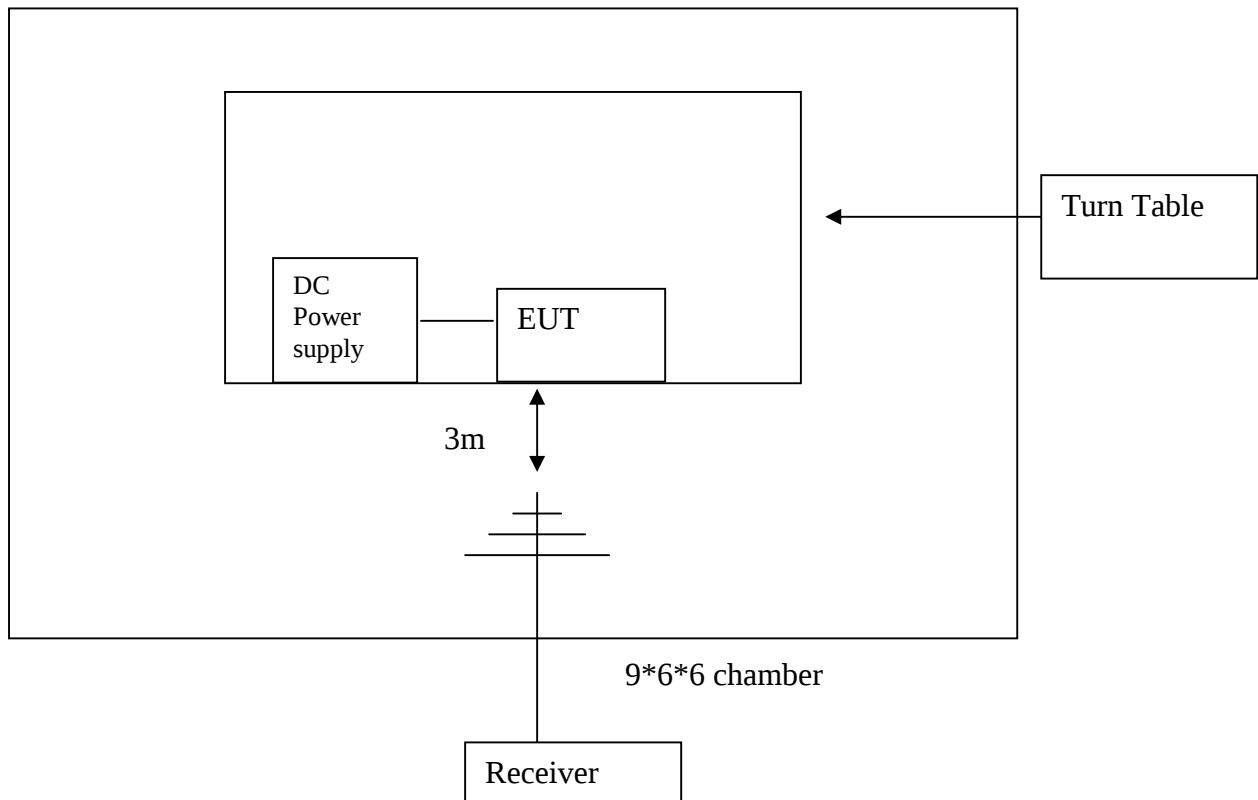
Test Method:

ANSI C63.4:2003; FCC Part 15.239(d)

Set the spectrum analyzer: RBW =10KHz VBW $\geq$ RBW , Span = enough to catch the trace. Sweep = auto; Detector Function = Peak. Trace = Max,hold.

5.3 TEST SETUP

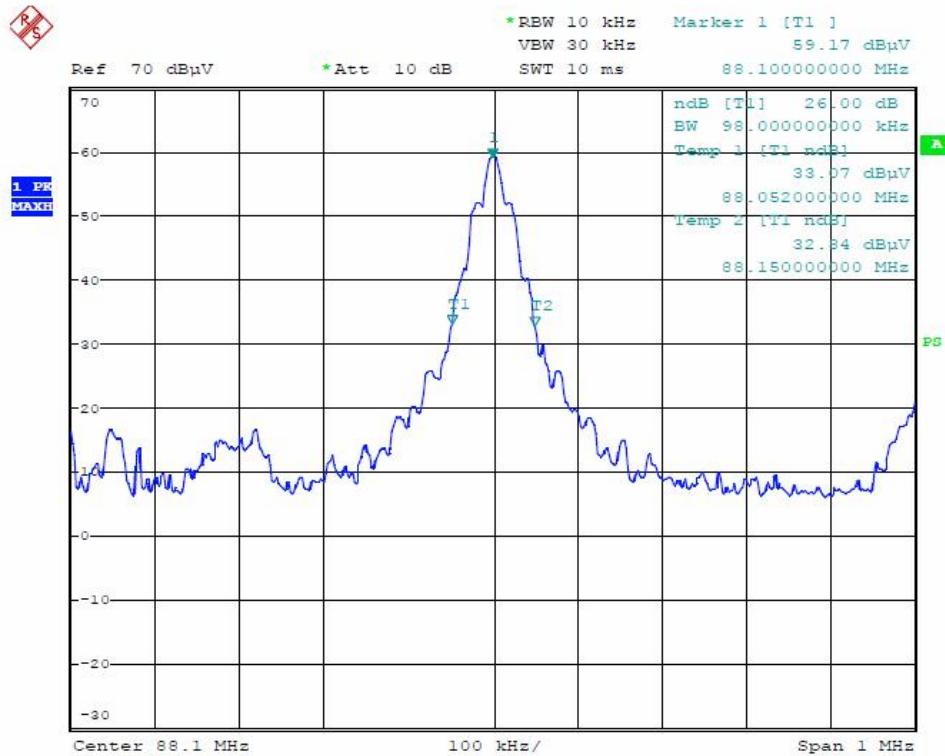
The EUT is connect DC power supply, open the EUT, Turn off the GPRS, BT mode, the EUT is keep on FM mode. The test measured by the receiver or spectrum analyzer.



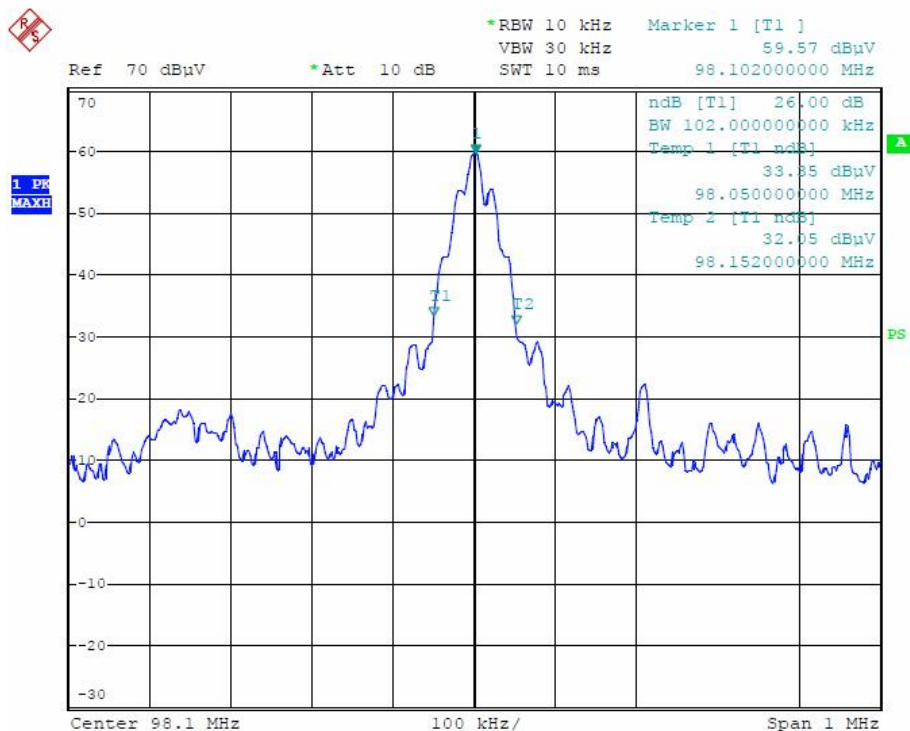
5.4 TEST RESULTS

Channel	frequency	Emission bandwidth	Limit(kHz)	Result
Low channel	88.1 MHz	98 kHz	200	Pass
Middle channel	98.1 MHz	102 kHz	200	Pass
High channel	107.9 MHz	112 kHz	200	Pass

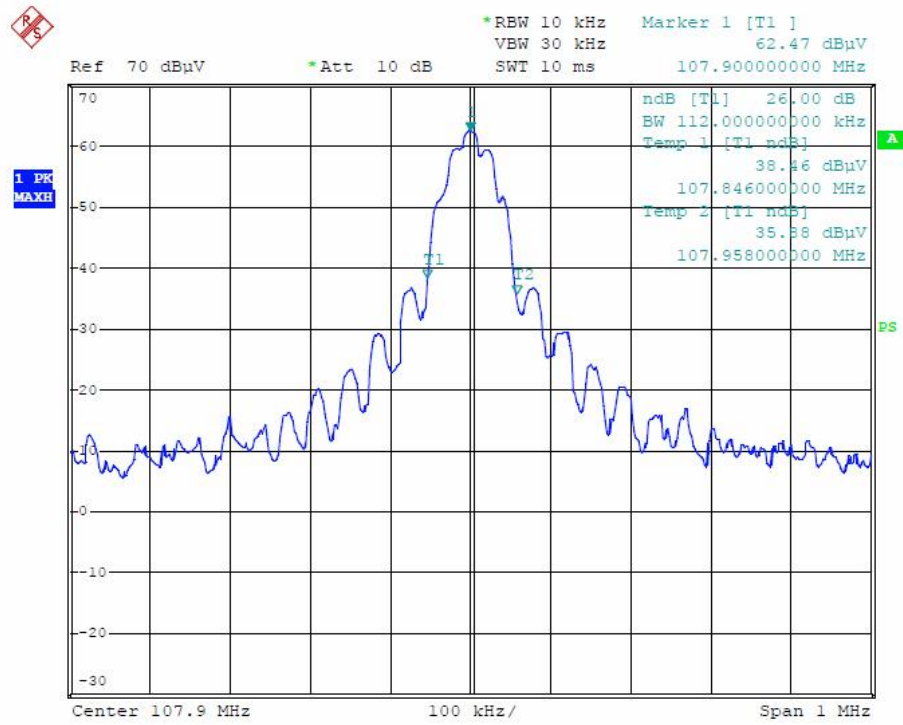
Low channel



Middle channel



High channel



6. Field strength

6.1 LIMITS

The field strength of any emissions within the permitted 200 kHz band shall not exceed 250 microvolts/meter at 3 meters. The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in Section 15.35 for limiting peak emissions apply

6.2 TEST PROCEDURES

Test Method:

ANSI C63.4:2003; FCC Part 15.239(b)

Set the spectrum analyzer: RBW =100KHz VBW >= RBW , Span = enough to catch the trace. Sweep = auto; Detector Function = Peak. Trace = Max,hold.

6.3 TEST SETUP

The EUT setup sees section 5.3

6.4 TEST RESULTS

Frequency (MHz)	polarization V/H	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Low channel							
88.1000	V	36.52	9.43	45.95	68	22.05	PK
88.1000	V	35.67	9.43	45.10	48	2.9	AV
88.1000	H	31.52	9.48	41.00	68	27	PK
88.1000	H	30.72	9.48	40.20	48	7.8	AV
Middle channel							
98.0000	V	38.26	9.94	48.20	68	19.8	PK
98.0000	V	36.36	9.94	46.30	48	1.7	AV
98.0000	H	30.66	9.94	41.99	68	26.01	PK
98.1000	H	32.04	9.95	40.60	48	7.4	AV
High channel							
107.9000	V	35.34	9.60	44.94	68	23.06	PK
107.9000	V	34.70	9.60	43.30	48	4.7	AV
107.9000	H	34.01	9.60	43.61	68	24.39	PK
107.9000	H	33.00	9.60	42.60	48	5.4	AV
TEST RESULTS: The EUT compliant the requirements							

7. Radiated Emission

7.1 LIMITS

Frequency (MHz)	Quasi-peak(dB μ V/m)
30 ~ 88	40
88~216	43.5
216 ~ 960	46
Above 960	54

NOTE: (1) The lower limit shall apply at the transition frequencies.

7.2 TEST PROCEDURES

Test Method:

ANSI C63.4:2003; FCC Part 15.239(c); FCC Part 15.209

Procedure of Preliminary Test

Radiated emission tests shall be made with the receive or transmit antenna located at a horizontal distance of 3 m plus half of the maximum width of the EUT being tested, measured from the centre of the EUT. The tests shall be performed with the equipment configured as closely as possible to its typical, practical operation. Unless stated otherwise, cables and wiring shall be as specified by the manufacturer and the equipment shall be in its housing (or cabinet) with all covers and access panels in place. Any deviation from normal EUT operating conditions shall be included in the test report.

The EUT (on a non-conductive support structure, where applicable) shall be placed on a remotely operated turntable, to allow the EUT to be rotated. The height of the EUT above the ground plane shall be according to the following requirements.

- Table-top equipment is placed on a non-conductive set-up table with height $0,8\text{ m} \pm 0,01\text{ m}$, ANSI C63.4:2003 specifies the method to determine the impact of the non-conductive set-up table on test results.
- Floor-standing equipment is placed on a non-conductive support, as specified in the applicable product standard. If there are no EUT height placement requirements in the product standard, the EUT shall be placed on a non-conductive support at a height of 5 cm to 15 cm above the ground plane.

Interface cables, loads, and devices should be connected to at least one of each type of the interface ports of the EUT and, where practical, each cable shall be terminated in a device typical for its actual use. Where there are multiple interface ports of the same type, a typical number of these devices shall be connected to devices or loads. It is sufficient to connect only one of the loads, provided that it can be shown, for example by preliminary testing, that the connection of further ports would not significantly increase the level of disturbance (that is, more than 2 dB) or significantly degrade the immunity level.

The test mode(s) described in Item 2.4 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.4 producing the highest emission level. The EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for the final test.

Procedure of Final Test

EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test. The Analyzer / Receiver scanned from 30MHz to 1000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying

cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level. Record at least six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and only QP reading is presented. The test data of the worst-case condition(s) was recorded.

Procedure of Final Test

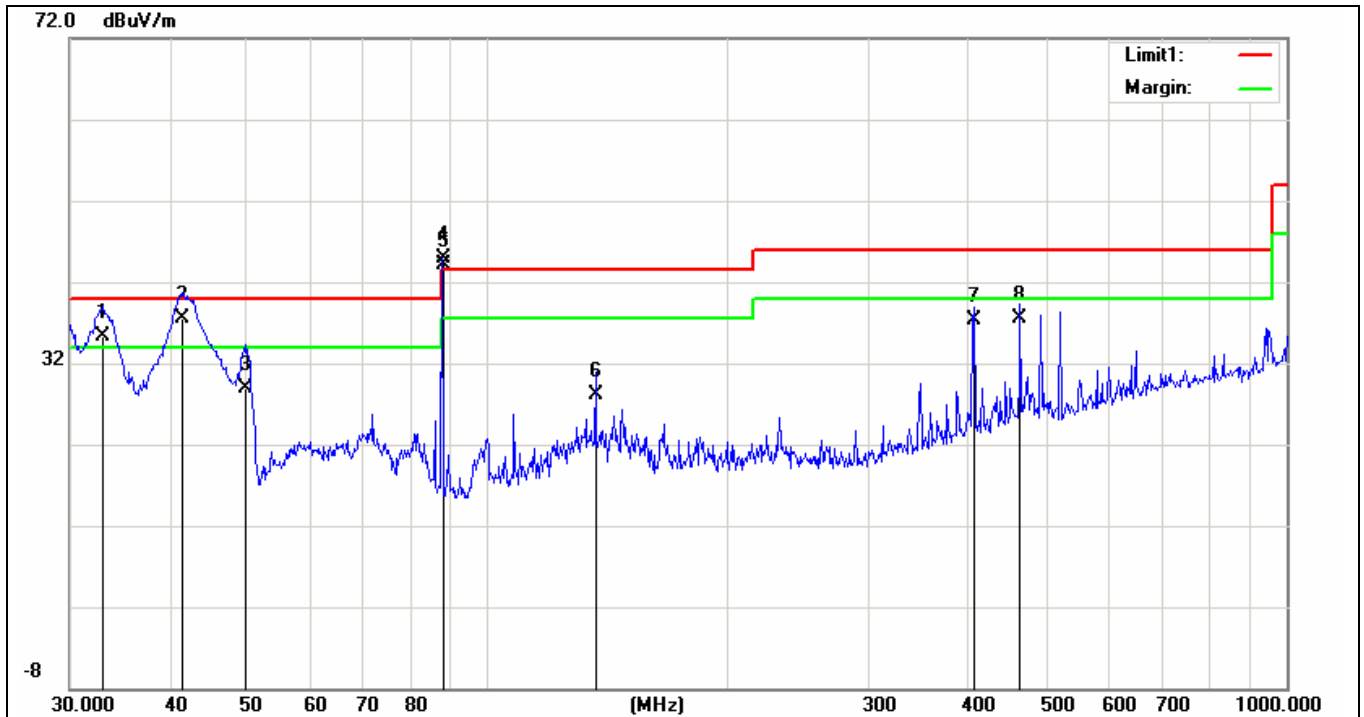
EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

7.3 TEST SETUP

The EUT setup sees section 5.3

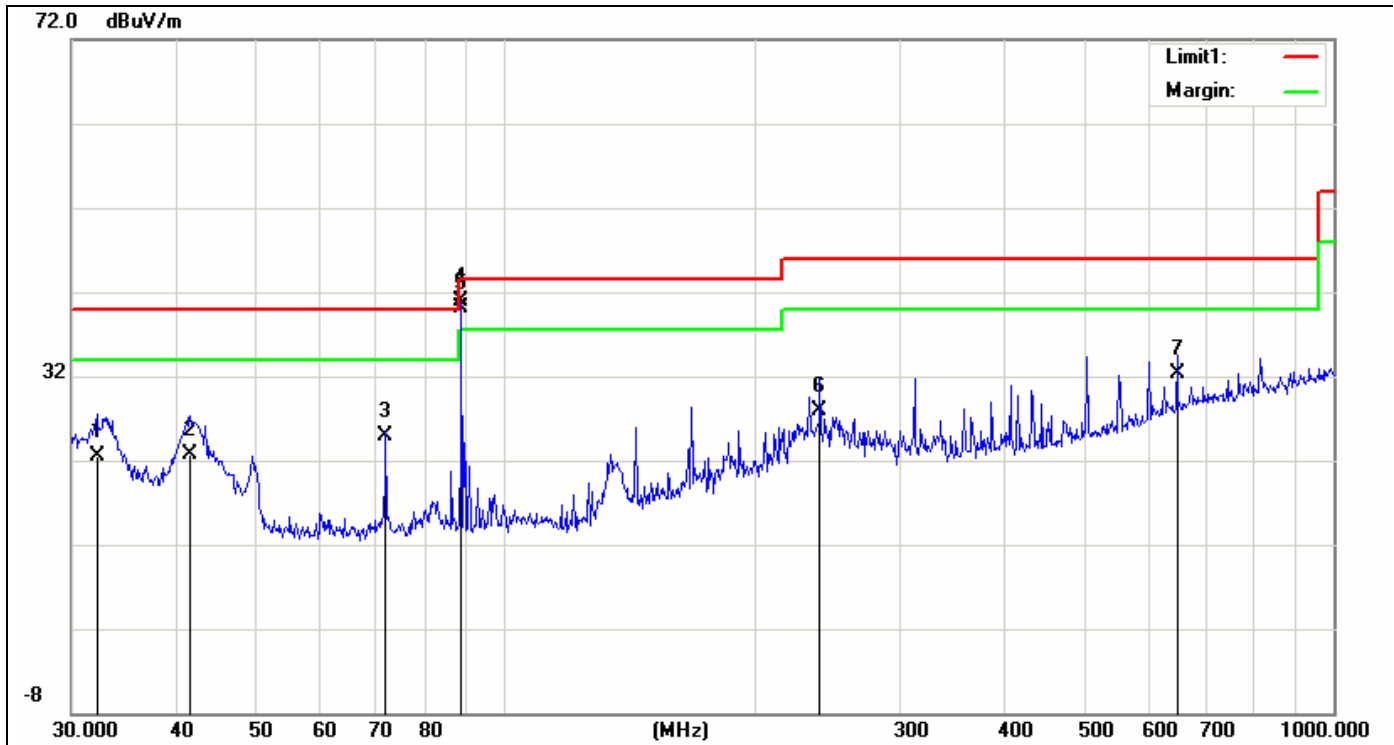
7.4 TEST RESULTS

Test Result:	Pass	Probe:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	DC 12V
Test item:	Radiation Test	Date:	2011-11-18
Temp./Hum.(%RH):	26/60%RH	Time:	10:45:22
EUT:	MUNIC	Model:	D4M 35MD02
Note:	Test mode: FM 88.1MHz		



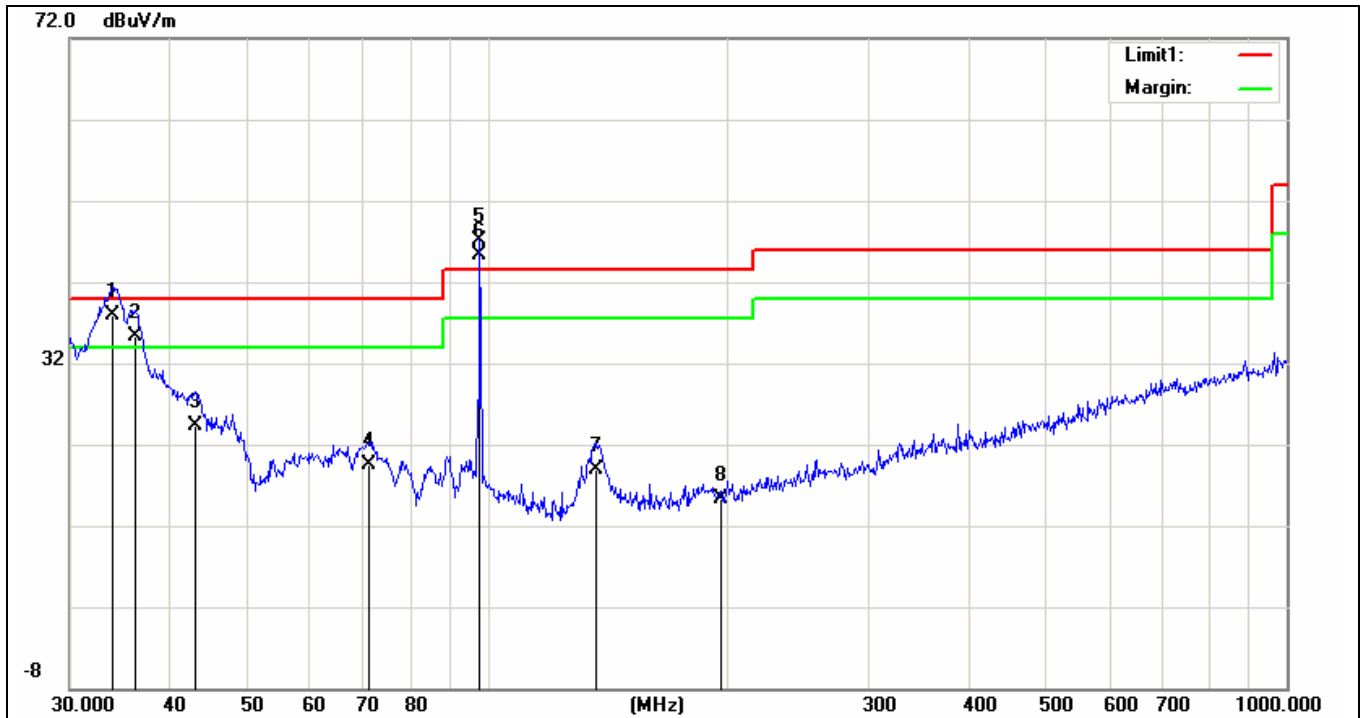
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.9791	17.78	17.62	35.40	40.00	-4.60	QP
2	41.5670	24.73	12.77	37.50	40.00	-2.50	QP
3	49.8814	19.12	9.78	28.90	40.00	-11.10	QP
4	88.1000	35.52	9.43	44.95	/	/	Fundamental
5	88.1000	34.67	9.43	44.10	/	/	Fundamental
6	136.4598	19.20	9.00	28.20	43.50	-15.30	QP
7	406.0880	19.17	18.23	37.40	46.00	-8.60	QP
8	463.9696	18.05	19.55	37.60	46.00	-8.40	QP

Test Result:	Pass	Probe:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	DC 12V
Test item:	Radiation Test	Date:	2011-11-18
Temp./Hum.(%RH):	26/60%RH	Time:	11:31:27
EUT:	MUNIC	Model:	D4M 35MD02
Note:	Test mode: FM 88.1MHz		



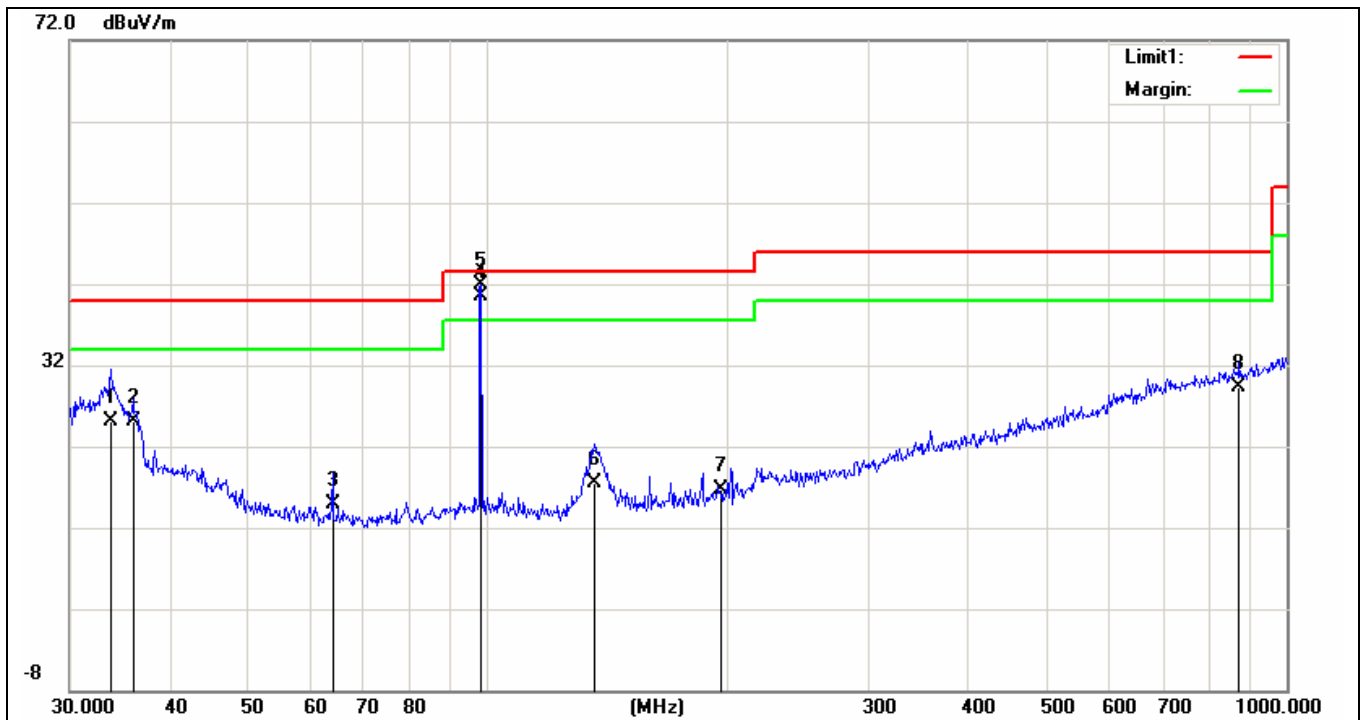
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.1795	4.40	18.10	22.50	40.00	-17.50	QP
2	41.7129	9.97	12.73	22.70	40.00	-17.30	QP
3	71.8320	17.10	7.80	24.90	40.00	-15.10	QP
4	88.1000	31.52	9.48	41.00	/	/	Fundamental
5	88.1000	30.72	9.48	40.20	/	/	Fundamental
6	239.9874	14.72	13.28	28.00	46.00	-18.00	QP
7	647.3856	9.61	22.79	32.40	46.00	-13.60	QP

Test Result:	Pass	Probe:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	DC 12V
Test item:	Radiation Test	Date:	2011-11-18
Temp./Hum.(%RH):	26/60%RH	Time:	10:44:22
EUT:	MUNIC	Model:	D4M 35MD02
Note:	Test mode: FM 98MHz		



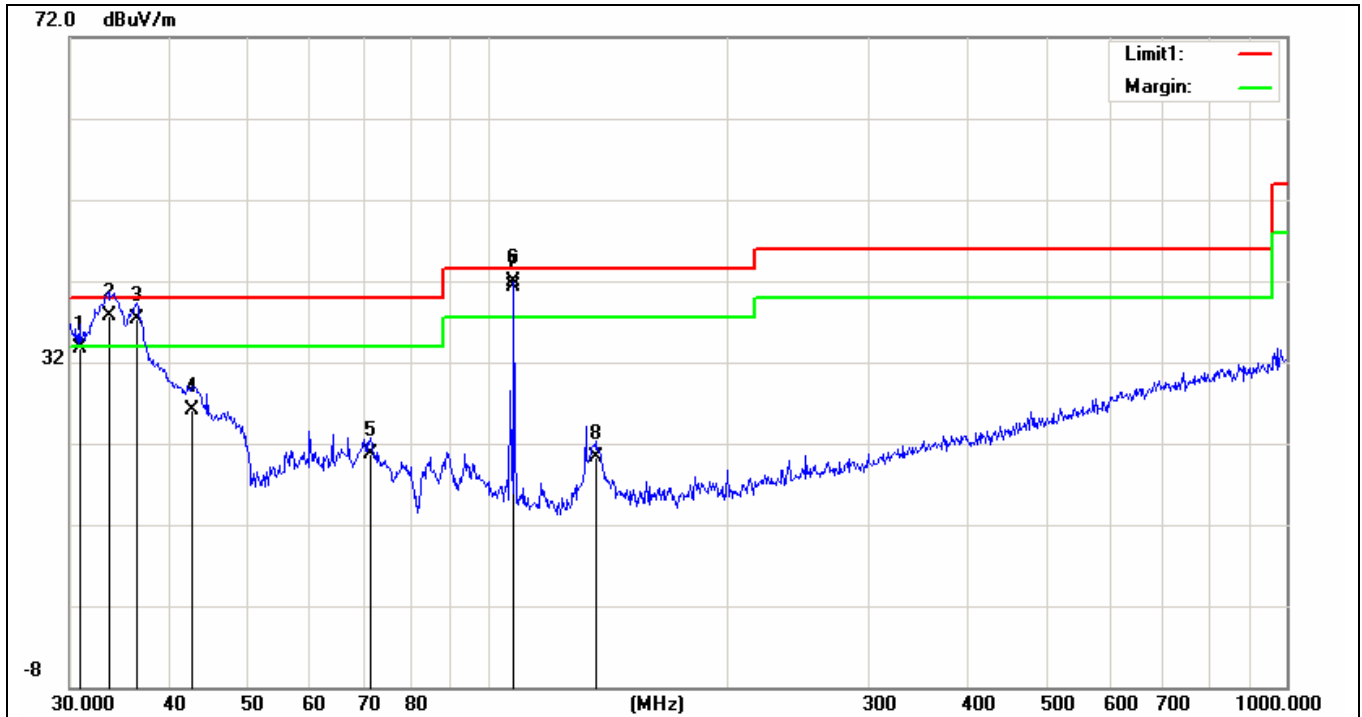
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.9174	20.86	17.04	37.90	40.00	-2.10	QP
2	36.2541	19.80	15.60	35.40	40.00	-4.60	QP
3	43.0505	12.15	12.25	24.40	40.00	-15.60	QP
4	71.0803	11.86	7.74	19.60	40.00	-20.40	QP
5	98.0000	37.26	9.94	47.20	/	/	Fundamental
6	98.0000	35.36	9.94	45.30	/	/	Fundamental
7	136.9391	9.98	9.02	19.00	43.50	-24.50	QP
8	196.0000	3.99	11.41	15.40	43.50	-28.10	QP

Test Result:	Pass	Probe:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	DC 12V
Test item:	Radiation Test	Date:	2011-11-18
Temp./Hum.(%RH):	26/60%RH	Time:	10:56:50
EUT:	MUNIC	Model:	D4M 35MD02
Note:	Test mode: FM 98MHz		



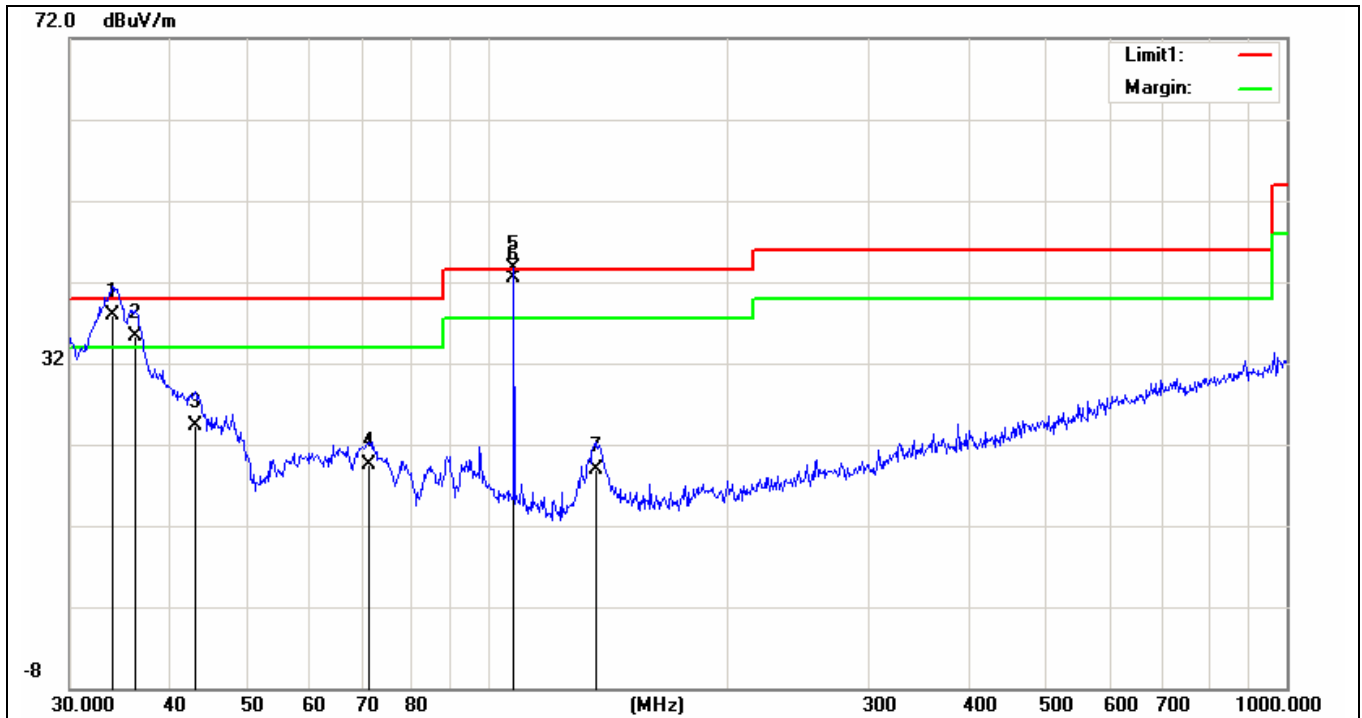
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.7986	7.98	17.12	25.10	40.00	-14.90	QP
2	36.0007	9.34	15.76	25.10	40.00	-14.90	QP
3	63.9828	7.13	7.87	15.00	40.00	-25.00	QP
4	98.0000	30.66	9.94	40.60	/	/	Fundamental
5	98.0000	32.04	9.95	41.99	/	/	Fundamental
6	135.9822	8.62	8.98	17.60	43.50	-25.90	QP
7	196.0000	5.29	11.41	16.70	43.50	-26.80	QP
8	872.1832	3.83	25.53	29.36	46.00	-16.64	QP

Test Result:	Pass	Probe:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	DC 12V
Test item:	Radiation Test	Date:	2011-11-18
Temp./Hum.(%RH):	26/60%RH	Time:	11:51:11
EUT:	MUNIC	Model:	D4M 35MD02
Note:	Test mode: FM 107.9MHz		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.8535	14.88	18.89	33.77	40.00	-6.23	QP
2	33.5623	20.44	17.26	37.70	40.00	-2.30	QP
3	36.3813	21.74	15.52	37.26	40.00	-2.74	QP
4	42.7496	13.79	12.36	26.15	40.00	-13.85	QP
5	71.3298	12.97	7.76	20.73	40.00	-19.27	QP
6	107.9	32.34	9.60	41.94	/	/	Fundamental
7	107.9	31.70	9.60	41.30	/	/	Fundamental
8	136.4598	11.23	9.00	20.23	43.50	-23.27	QP

Test Result:	Pass	Probe:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	DC 12V
Test item:	Radiation Test	Date:	2011-11-18
Temp./Hum.(%RH):	26/60%RH	Time:	10:59:50
EUT:	MUNIC	Model:	D4M 35MD02
Note:	Test mode: FM 107.9MHz		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.9174	20.86	17.04	37.90	40.00	-2.10	QP
2	36.2541	19.80	15.60	35.40	40.00	-4.60	QP
3	43.0505	12.15	12.25	24.40	40.00	-15.60	QP
4	71.0803	11.86	7.74	19.60	40.00	-20.40	QP
5	107.9000	34.01	9.60	43.61	/	/	Fundamental
6	107.9000	33.00	9.60	42.60	/	/	Fundamental
7	136.9391	9.98	9.02	19.00	43.50	-24.50	QP

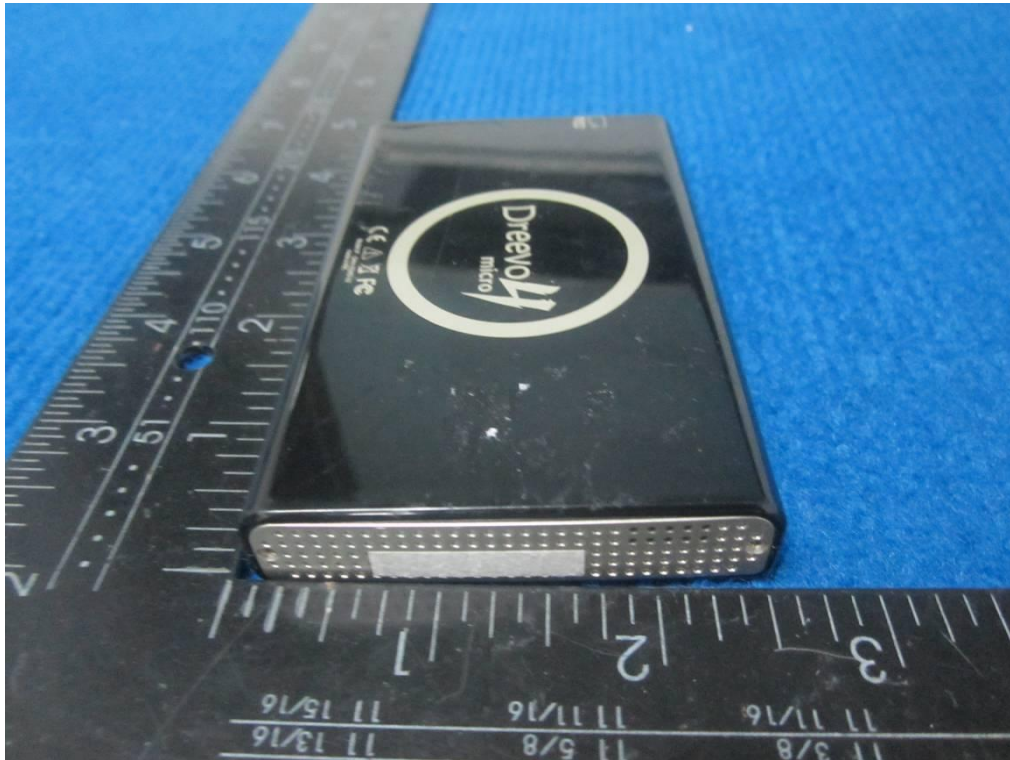
APPENDIX A: PHOTOGRAPH OF THE TEST ARRANGEMENT



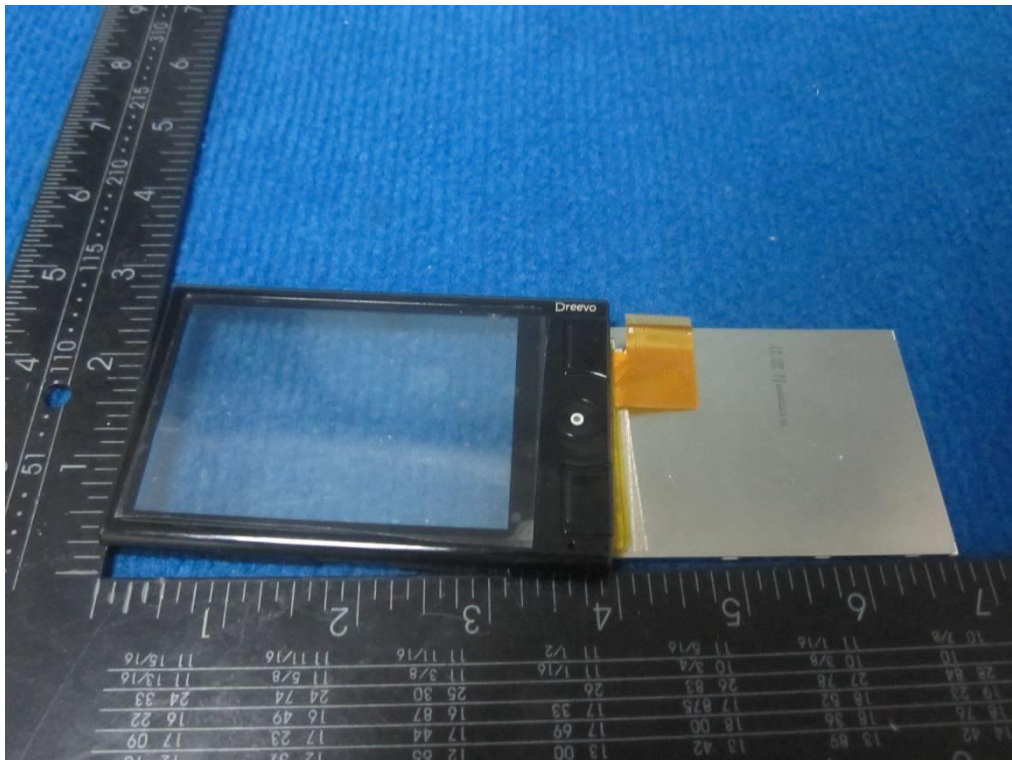
APPENDIX B: PHOTOGRAPH OF THE EUT











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